



# Integrated Mathematics II Reference Sheet

## Formulas

<b>Parallelogram</b> $Area = bh$	<b>Rectangle</b> $Area = lw$ $Perimeter = 2l + 2w$												
<b>Triangle</b> $Area = \frac{1}{2}bh$	<b>Trapezoid</b> $Area = \frac{1}{2}h(b_1 + b_2)$												
<b>Circle</b> $Area = \pi r^2$	<b>Rectangular Prism</b> $Volume = lwh$ or $Volume = Bh$												
<b>General Equations</b> $Ax + By = C$ $y = mx + b$ $y - y_1 = m(x - x_1)$ $y = ax^2 + bx + c$ $(x - h)^2 + (y - k)^2 = r^2$ $f(x) = a(b)^x$ $f(x) = P(1 \pm r)^x$	<b>Height of an Object</b> $h_t = -16t^2 + vt + h_0$ $h_t = -4.9t^2 + vt + h_0$ where $h_t$ = height at time $t$ $v$ = initial velocity $h_0$ = initial height												
<b>Slope Formula</b> $m = \frac{y_2 - y_1}{x_2 - x_1}$	<b>Pythagorean Theorem</b> $a^2 + b^2 = c^2$												
<b>Distance Formula</b> $D = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$													
<b>Quadratic Formula</b> $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	<b>Interest</b> $I = prt$												
<b>Right Triangle Relationships</b> <table><tr><td>30°</td><td>60°</td><td>90°</td></tr><tr><td><math>x</math></td><td><math>x\sqrt{3}</math></td><td><math>2x</math></td></tr></table> <table><tr><td>45°</td><td>45°</td><td>90°</td></tr><tr><td><math>x</math></td><td><math>x</math></td><td><math>x\sqrt{2}</math></td></tr></table>	30°	60°	90°	$x$	$x\sqrt{3}$	$2x$	45°	45°	90°	$x$	$x$	$x\sqrt{2}$	<b>Trigonometric Ratios</b> $\sin A = \frac{\textit{opposite}}{\textit{hypotenuse}}$ $\cos A = \frac{\textit{adjacent}}{\textit{hypotenuse}}$ $\tan A = \frac{\textit{opposite}}{\textit{adjacent}}$
30°	60°	90°											
$x$	$x\sqrt{3}$	$2x$											
45°	45°	90°											
$x$	$x$	$x\sqrt{2}$											